

# Preparing for the Academic Job Market

Tips I learned from our University  
of Maryland faculty search(es)

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# Outline

- what do departments look for?
- how to get the most from your postdoc
- marketing yourself to academia
- when to look elsewhere

## Also

- what to look for in a postdoc position

# My personal background/caveats

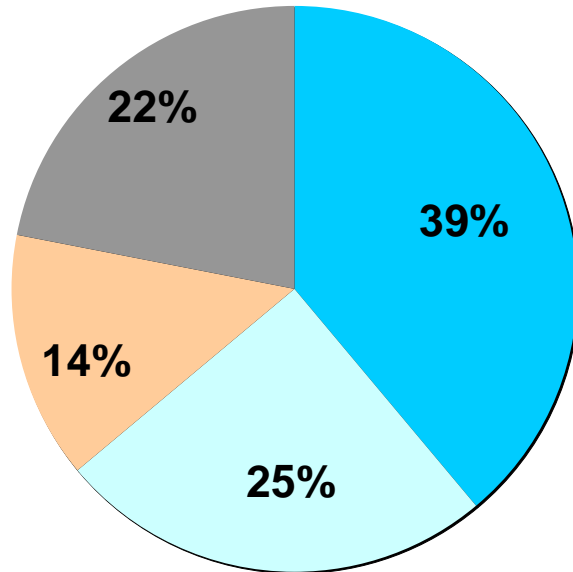
- B.A. small college (no research experience)
- Ph.D. @ “top 10” research university w/ on-site lab
- postdoc at private university in a well-funded group (not at lab)
- prof (since 1993) in large public research university with large (70 faculty) and diverse physics dept
  - a small fraction is nuclear physics
  - competition between fields for hiring
  - teaching load low, but teaching to nonscientists likely

*you might get a different perspective from someone else  
→ seek it out!*

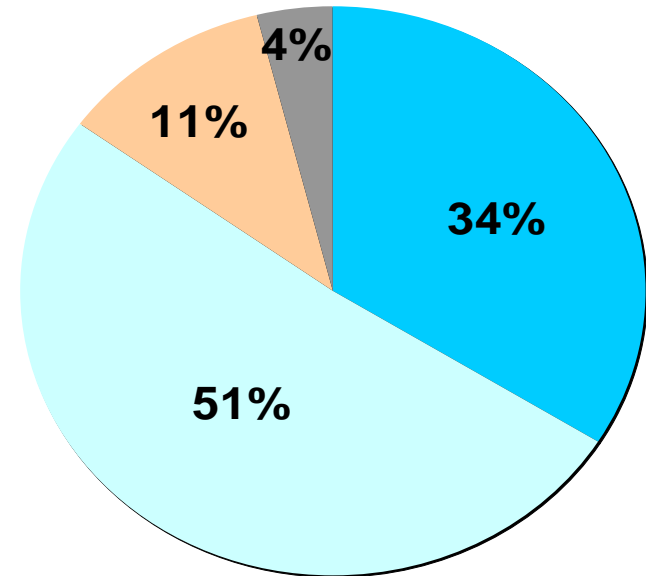
# resources

- NSAC Education subcommittee report  
[http://www.sc.doe.gov/np/nsac/docs/NSAC\\_CR\\_education\\_report\\_final.pdf](http://www.sc.doe.gov/np/nsac/docs/NSAC_CR_education_report_final.pdf)
- “Making the Right Moves” (scientific management)  
[http://www.hhmi.org/grants/office/graduate/lab\\_book.html](http://www.hhmi.org/grants/office/graduate/lab_book.html)
- CV preparation:  
<http://chronicle.com/jobs/tools/cvdoctor/03.htm>
- General: <http://chronicle.com/jobs/>
- Look on the web for other resources (there are lots!)
- Seek out advice from senior colleagues

# Career plans: current nuclear science graduate students & postdocs



Current graduate students



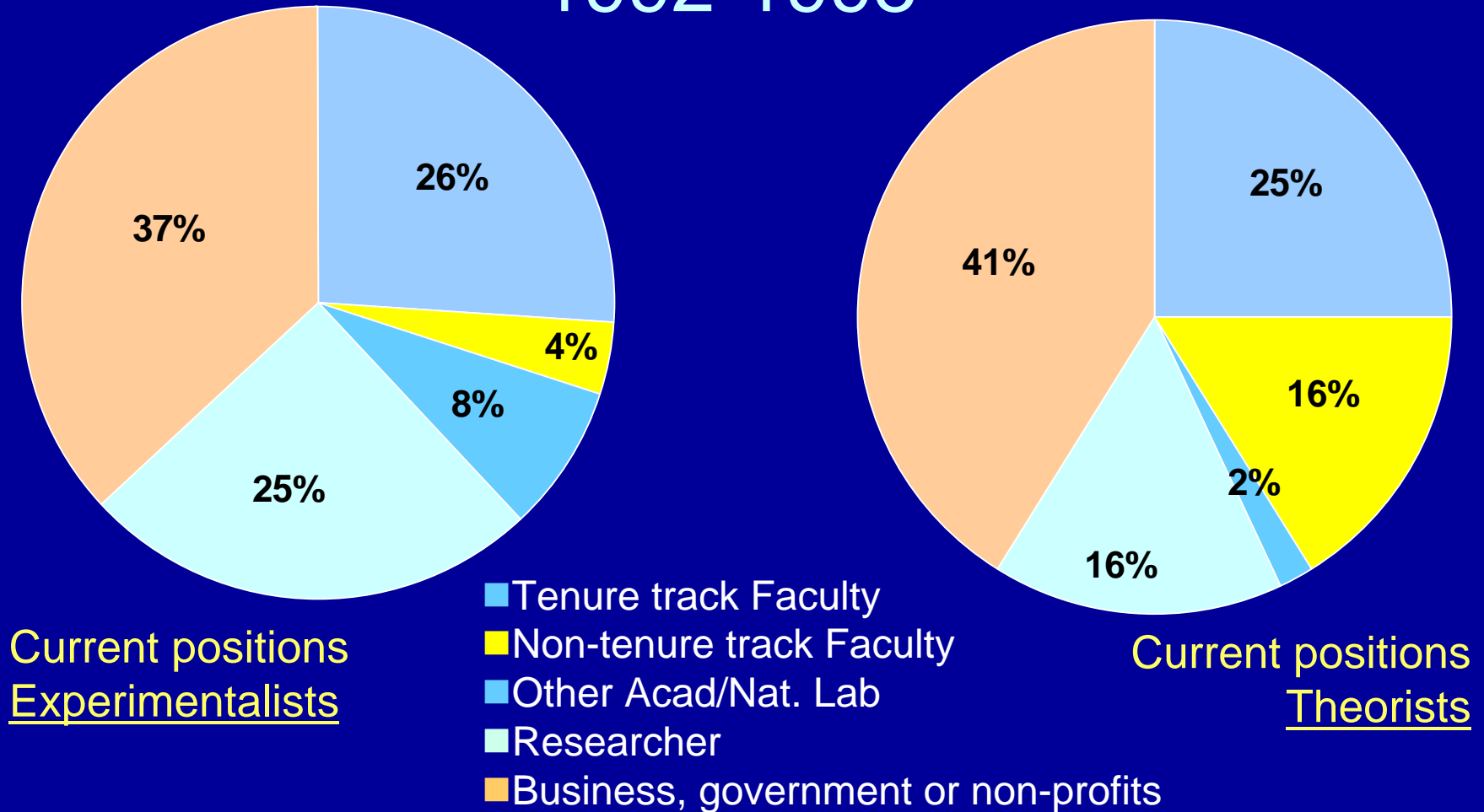
Current postdocs

- Tenure track Faculty
- Researcher
- Business, government or non-profit
- Undecided

Slide from J. Cizewski, Rutgers University

Source: Graduate Student & Postdoc Surveys , C.Beausang, T. Hallman, et al.

# Current positions nuclear science PhDs, 1992-1998



Slide from J. Cizewski, Rutgers University

Source: Nuclear Science PhD 5-10 Years Later Survey, J. Cerny et al.

# Typical Academic Life

- 50/30/20: Research/Teaching/Committees
  - teaching load higher at non-PhD granting schools
- write grant/research proposals
- recruit and advise students
- teach science to nonscientists
- department governance
  - hiring priorities, curriculum, advising/mentoring
- university-wide committees
- write more grant proposals
- manage budgets and people (and sometimes projects)

# What do depts look for?

- fundability
  - sometimes means popular field
- high likelihood of tenure
  - will you have a new physics result to talk about within 3-5 years?
- leadership/
  - can you manage other people?
- collegiality
  - can you work with other faculty?
- good communication skills (teaching potential)
- flexibility
  - are you prepared to change directions when funding directions change?



# Getting the most from your postdoc

- Round out your experience
  - (lab vs university, hardware vs software, etc.)
- Take on a position of responsibility on a running experiment (spokesperson is only one of many ways of leadership)
- Look for opportunities to mentor students
- Earn the respect of visible senior colleagues (who will write letters for you)
- Don't overstay your welcome! (3 years in one job is generally enough)
- be sure your work is getting published

# Marketing yourself

- volunteer to give briefings at collaboration meetings
- Look for opportunities to give talks
- Go to a major conference per year (at most 2?)
- Keep a current professional web page with your own work
- talk to your supervisor annually about your progress/potential

# What goes in your application

- letter of introduction
  - 1 page max, indicate who will be letter-writers
- CV (include letter-writers here too)
- Research statement (see next)
  - should include both past and future
- Teaching statement
  - experience not essential, but highlight it if you have some
  - should have a “teaching philosophy”

# Research statement

- Have 2 “visions”
  - short term (3-5 yrs): will get results in 5 years
  - long term (5-10 yrs): exciting, visionary, can be speculative (doesn't have to be exactly what you do)
- Highlight where you've been a leader (how will you make your new university a “player”)
- Be (somewhat) specific about how you plan to get students involved (on campus is good if possible)
- Do some background on where you are applying
  - What is the department looking for? What new dimension would you bring?

# the interview

- Get lucky! but be opportunistic (and open-minded)
- Get a copy of your interview schedule in advance and do some research on who you will meet
- Know your strengths and tell people about them (but don't be arrogant!)
- know your audience (they're probably not working at JLab!)
- Have a teaching philosophy
  - graduate quantum mechanics? NO!
  - freshman nonmajor physics? YES!
- See this link by P. Beuning: "Preparing for Academic Job Interviews"

<http://web.mit.edu/career/www/graduate/academiccareers.html>

# typical interview schedule

- ½ hour interviews w/many faculty
- seminar
- teaching interview
- meet w/ department chair
- sometimes meet w/Dean or administrator
- sometimes meet w/ groups of students

## Prepare:

- prepare 1-2 minute summary of your research
- ditto for teaching experience/interest
- brief yourself on research interests of faculty you will meet: show interest and look for areas of overlap
- think about what lab space/resources you might want
- Be positive!

# What also happens (out of your control)

- Department politics
- Demographics
- fashion trends in physics
- resources

# Finding a good postdoc

- Get out of graduate school as quickly as possible
- Don't be afraid to change
  - experimental Halls at a minimum!
  - experimental subfields
  - experimental fields
- Name brands count (perhaps more than they should)
- Laboratory vs University tradeoffs



# addt'l Web resources I found for this talk

Jonathan Danzig, UIUC Mechanical Engineering Dept.

"Landing an Academic Job"

[http://quattro.me.uiuc.edu/~jon/ACAJOB/Latex2e/academic\\_job.pdf](http://quattro.me.uiuc.edu/~jon/ACAJOB/Latex2e/academic_job.pdf)

APS Careers in Physics web site

<http://www.aps.org/jobs/index.cfm>

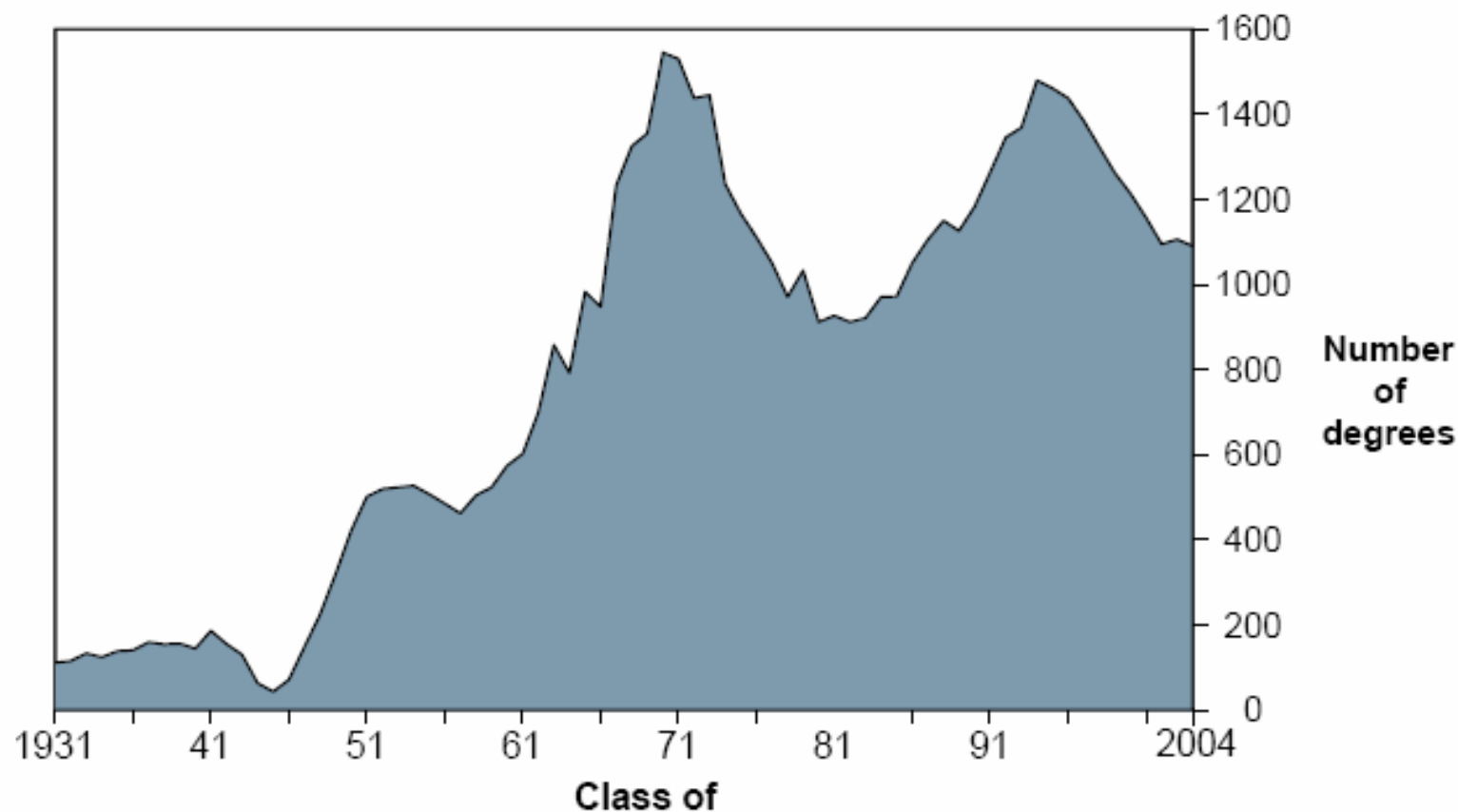
<http://www.phds.org/jobs/>

Berkeley Physics and Astronomy Job Hunting Resources

<http://cosmology.berkeley.edu/jobs/jobover.html>

Supplementary

**Number of physics PhDs conferred in the United States,  
1931 to 2004.**



Sources: NAS (1931-1961), AIP (1962-2004)  
Statistical Research Center, Enrollments and Degrees Report.

## 1<sup>st</sup> Year Students Entering Graduate Physics Programs

	Foreign	U.S. citiz.
Academic Year	N	N
Fall 2004	1292	1746
Fall 2003	1481	1697
Fall 2002	1339	1535
Fall 2001	1434	1343
Fall 2000	1485	1228
Fall 1999	1328	1182
Fall 1998	1251	1166

# Employer Type by Year of PhD, 2001

PhD Year	Industry %	Academe %	Gov't, Non-Profit, Hospital
			%
1996-2000	46	40	13
1991-1995	54	30	15
1986-1990	41	36	21
1981-1985	47	34	18
1976-1980	46	28	26
1971-1975	45	31	23
1970 & earlier	37	44	18

Source: NSF Survey of Doctoral Recipients